



**INSTREAM FLOW PILOT  
STATUS REPORT  
November 1, 2006**

NH Rivers Management and Protection Program  
New Hampshire Department of Environmental Services  
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The NH Instream Flow Program consists of the two pilot studies on the Souhegan and Lamprey Designated Rivers and other activities that protect instream flows. The Rivers Management and Protection Program requires flow protection for Designated Rivers. There are currently fourteen Designated Rivers under this program.

## **A. PROGRAM-WIDE ACTIVITIES**

### **1. Water Use Report 2004**

The Instream Flow Rules (Env-Ws 1903.02) require the Department to annually estimate water use versus stream flow on Designated Rivers. The assessment compares average monthly aggregate water use to average monthly stream flow. For each Designated River without established protected instream flows, the assessment identifies the month(s) and location(s) not in compliance with the General Standard. The General Standard is a set of reference water use levels that allows an equal comparison of water use between the different sized Designated Rivers. It is defined in Env-Ws 1903.2 (<http://www.des.state.nh.us/rules/env-ws1900.pdf>). The General Standard is a tool for this comparison, not a regulatory or impairment standard. Rivers that are not in compliance with the General Standard are not necessarily impaired or threatened due to flow alteration, but there is sufficient water use relative to stream flow to warrant further analysis. Values of the monthly difference from the normal precipitation for each Water Management Planning Area were added to this year's assessment. This precipitation information was added to put water use in context with weather conditions.

The 2004 Annual Water Use versus Stream Flow assessment showed part or all of the following Designated River segments exceeded the General Standard (GS) during calendar year 2004:

Designated River Name	Months Not in Compliance with GS	Miles Not in Compliance with GS
Ashuelot	July and August	1.5 - 7.6
Contoocook (North Branch)	July, August and September	1.4
Contoocook (main stem)	All months except April	0.1 - 25.2
Exeter	July	28.1
Isinglass	All 12 months	11.2
Lamprey	February, July, August	0.1 - 12.1
Lower Merrimack	August	14.7
Piscataquog, main stem	July	>3.1
Souhegan	February, July - November	0.4 - 23.9

Designated River segments that did not exceed the General Standard in 2004 were:

- Cold
- Connecticut
- Pemigewasset
- Upper Merrimack

- Piscataquog (North Branch, South Branch, Middle Branch)
- Swift
- Saco

## **2. Funding Extended**

The NOAA grant, which awarded \$545,000 to the NH Instream Flow Program in October 2004, was extended to September 30, 2007. The grant provides funds for the consulting work on the Lamprey Pilot Project's Protected Instream Flows Study and Water Management Plan, and also for Department administration of the Program. The Department originally applied for a four-year grant duration, but was limited by federal processes to a two-year grant.

## **3. Stream Gage Task Force**

The Rivers Management Advisory Committee recommended that a task force be established to study the dwindling stream gage network in NH and identify existing data needs. Data needs were identified for a number of purposes—one of which was protection of instream flow. The Stream Gage Task Force's evaluation of the NH stream gage network was completed September 15, 2006 resulting in recommendations for additional gages in seventeen watersheds (Hydrologic Unit Code-10 scale) including the Souhegan and Lamprey watersheds. The task force report can be found at [http://www.des.state.nh.us/rivers/rmac/NH\\_SGTF.htm](http://www.des.state.nh.us/rivers/rmac/NH_SGTF.htm).

## **B. SOUHEGAN RIVER PILOT PROJECT**

### **1. ISF Committees**

Separate reports are available for the activities of the Souhegan Technical Review Committee and the Souhegan Water Management Planning Area Committee. The Technical Review Committee will meet again at the Proposed Protected Instream Flow public hearing expected by the end of 2006. The next WMPAAC meeting will also be at the public hearing. Meeting information for these Souhegan committees is available on the website at <http://www.des.state.nh.us/rivers/instream/souhegan.htm>.

### **2. Souhegan Protected Instream Flow Study and Water Management Plan**

UNH is responsible for conducting the Protected Instream Flow Study and developing the Water Management Plan. UNH's proposal for the Protected Instream Flow Study and Water Management Plan can be read at <http://www.des.state.nh.us/rivers/instream/souhegan/documents/April1504CoopAgree.pdf>.

An extension of the Souhegan contract was approved by Governor and Executive Council October 11, 2006. The deadline for contract completion was extended to October 1, 2007.

Task 2 to assess the impact of groundwater withdrawals on stream flow was nearing completion at the end of last year. The completed report was reviewed and approved by the Technical Review Committee November 28, 2005.

The final round of stream surveys necessary for Task 5 (Protected Instream Flow Assessments) was completed in 2005. The data collected were used to complete an assessment of flow needs for the flow-dependent riverine entities over the 2005/2006 winter. This process included the development of a Target Fish Community, which was presented to the Technical Review Committee at the November 28, 2005 meeting. The Target Fish Community was used to determine the makeup structure and species that should be assessed for flow needs for the Souhegan River. The results of these assessments were compiled in a draft Proposed Protected Instream Flow report (1 March 2006) which was presented before the Souhegan TRC on March 13, 2006 for review and comments. Revisions and additions were made

over the summer and early fall 2006 in response to TRC comments. The process of review and comment evaluated in great detail the components of the Target Fish Community used to generate protected flow values for aquatic life. An additional appendix (Appendix 16 – Example of calculations used in the development of fish habitat based prescriptions of protected flows for the Souhegan River) was generated in response to comments concerning documentation of the actual data inputs and process of calculations that had been used to generate flow recommendations. A new software package was created to facilitate the habitat and flow calculations. Using this package the entire Souhegan data set was rerun to ensure repeatability of the calculations and results.

## **ESTIMATED TIMELINE**

### **For Souhegan River Instream Flow Protection Pilot Project**

October 06	Task 5 – PISF Assessments and Proposed PISF Report
November 06	Task 6 – PISF Public Hearing (joint)
December 06	Task 7 – PISF Report for the Souhegan River
	<b>DES establishes the Protected Instream Flow for the Souhegan</b>
Ongoing	Task 8 – Assessment of Water Use with the Established PISF
Ongoing	Task 9 – Development of WMP Sub-Plans
May 07	Task 10 – Proposed WMP
June 07	Task 11 – WMP Public Hearing (joint)
August 07	Task 12 – WMP Report for the Souhegan
	<b>DES adopts Water Management Plan for Souhegan</b>

## **C. LAMPREY RIVER PILOT PROJECT**

### **1. ISF Committees**

Separate reports are available for the activities of the Lamprey Technical Review Committee and the Lamprey Water Management Planning Area Committee. The next Lamprey WMPAAC meeting will be in the spring to review the Proposed Protected Instream Flow report. The TRC will meet prior to that to review and comment on the draft version. Committee meeting information for is available on the website at <http://www.des.state.nh.us/rivers/instream/lamprey.asp>.

### **2. Lamprey Protected Instream Flow Study and Water Management Plan**

Normandeau Associates (NAI) is the lead firm responsible for conducting the Protected Instream Flow Study and developing the Water Management Plan. Al Larson replaced Don Kretchmer as the NAI manager for the Lamprey Pilot in February 2006. Mr. Larson will also be Normandeau's manager on their portion of the Souhegan pilot program. The proposal for the Lamprey Protected Instream Flow Study and Water Management Plan can be read at <http://www.des.state.nh.us/rivers/instream/lamprey/documents/UNH-UMASS-NAI.pdf>.

Work tasks began in the late fall of 2005 under the contract approved by G&C July 13, 2005. Three rounds of field surveys were completed during the 2006 field season. Task 4, which identifies the Instream Flow assessment methods that will be used to address the flow-dependent IPUOCRs, was completed this year. This report documents the activities that will be conducted under Task 5 Protected Instream Flow Assessment. Under Task 5, the NAI team will use MesoHABSIM method for assessing flows for fish. The NAI team was selected because of their proposal to apply this method and the proposed innovations that will be tested. An airphoto-based survey method for collecting model input data will be tested during the Lamprey project. An additional task to use remote sensing techniques to

assess flows for riparian vegetation and wetlands will be added to the program upon approval of the Governor and Executive Council. This method is being tested to replace much of the labor-intensive field work of the transect survey method currently used.

Preliminary work on Task 9, the development of Water Management Plan sub-plans, continues. The Lamprey consultants are gathering water use information from Affected Water Users and Affected Dam Owners that will be used to identify the best management alternatives. Letters have been distributed to confirm documented information and interviews were held to identify possible water use conflicts. Surveys were conducted to identify valued aspects of the river.

## **ANTICIPATED TIMELINE**

### **For Lamprey River Instream Flow Protection Pilot Project**

Ongoing	Task 2 - Assessment of Well Withdrawal Impacts on Surface Water
January 07	Task 5 – PISF Assessments and Proposed PISF Report
March 07	Task 6 – PISF Public Hearing (jointly with legislature)
April 07	Task 7 – PISF Report for the Lamprey River
	<b>DES establishes the Protected Instream Flow for the Lamprey</b>
April 07	Task 8 – Assessment of Water Use with the Established PISF
Ongoing	Task 9 – Development of WMP Sub-Plans
July 07	Task 10 – Proposed WMP
August 07	Task 11 – WMP Public Hearing (jointly with legislature)
October 07	Task 12 –WMP Report for the Lamprey
	<b>DES adopts Water Management Plan for Lamprey</b>

## **D. ADDITIONAL TASKS FOLLOWING ADOPTION OF THE LAMPREY AND SOUHEGAN WATER MANAGEMENT PLANS**

The Pilot Program will be completed by the establishment of Protected Instream Flows and adoption of Water Management Plans on the Lamprey and Souhegan Rivers. One year following the WMP adoptions, THE DEPARTMENT will hold a public hearing followed by a comment period. At the end of this period The Department and the SB330 committee will present their final reports to the governor and the legislature by December 1, 2008.

### **PILOT COMPLETION DEADLINES (From Laws of 2002, Chapter 278 as revised by Laws of 2003, Chapter 319 (HB4 – State Budget))**

<b>By April 1, 2007</b>	<b>DES report to legislature (PISF and WMPs)</b>
<b>By June 1, 2007</b>	<b>DES/legislative committees hold public hearing(s) jointly</b>
<b>By October 1, 2007</b>	<b>Lamprey and Souhegan PISFs and WMPs adopted</b>
<b>By October 1, 2008 or one year following WMPs adoption</b>	<b>DES public hearing and 30-day comment period</b>
<b>By December 1, 2008</b>	<b>DES final report to legislature</b>
<b>By December 1, 2008</b>	<b>SB 330 report to governor and legislature</b>